

GKN Driveline International GmbH
Hauptstrasse 150
53797 Lohmar

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Transfer box with crown teeth

Claims

1. A transfer box with a housing (11), an input shaft (12), a first output shaft (13) extending coaxially relative to said input shaft (12), and a second output shaft (14) extending parallel to said first output shaft and said input shaft, as well as with a differential gear assembly arranged between said shafts, wherein the input shaft (12) carries a spider member (23) with a plurality of radial bearing arms (24) for the differential gears (25), wherein a first side gear (26) is connected in a rotationally fast way to the first output shaft (13) and wherein a second side gear (27) is rotatably supported on the input shaft and drives the second output shaft (14), wherein the differential gears (25) are spur gears and the side gears (26, 27) are crown gears and wherein the teeth of the differential gears (25) engage the teeth of the side gears (26, 27).

2. A transfer box according to claim 1,

characterised in

that a gearwheel or sprocket wheel (29) for driving the second output shaft (14) via a gearwheel stage or chain drive is integrally connected to the second side gear (27).

3. A transfer box according to claim 1 or 2,

characterised in

that the input shaft (12) and the first output shaft (13) are each singly supported in the housing and that the input shaft (12) is supported by means of a journal projection (18) in a end countersunk portion in the first output shaft (13), more particularly by a needle bearing (20).

4. A transfer box according to any one of claims 1 to 3,

characterised in

that the side gears (26, 27) are axially outwardly supported in opposite directions in the housing (11) via the bearing means of the input shaft (29) and of the first output shaft (13). (Figure 1).

5. A transfer box according to any one of claims 1 to 3,

characterised in

that the side gears (26, 27) are axially supported on one another, wherein at a first one of the side gears (26, 27), there is axially firmly arranged a carrier (37) which extends over the other one of the side gears (26, 27) and via which the other one of the side gears is axially supported on the first one of the side gears. (Figure 2).

6. A transfer box according to claim 5,

characterised in

that between the carrier (37) and the second one of the side gears, there is arranged an axial bearing (38) or friction discs (39) for axial supporting purposes. (Figure 3).

7. A transfer box according to any one of claims 1 to 6,

characterised in

that for the purpose of a non-uniform torque distribution between the output shafts (13, 14), the side gears (26, 27) comprise different rolling circle radii (r_1 , r_2). (Figure 4).